

thetic; customers do not want it. There is also apparently some tendency for red races to tiller poorly, to produce small heads, and to shatter; in short, to be poor yielders. I suspect a tendency to fruit early; this may explain the absence of red rice in the old *wataribuni* and its presence in the subsequently developed earlier varieties. Eradication will not be easy. It is not always possible to recognize and pull by hand individual plants which will produce red seed; and manipulation of water level, by which many weeds can be placed at a disadvantage, cannot be expected to damage one race of rice more than another.

All this work on weeds may lead to the publication of a new weed book for California. The old one, Smiley's useful work,¹⁹ was published as a number of this same Monthly Bulletin. This review of botanical papers in recent volumes of the Monthly Bulletin would be incomplete without reference to the report of Goss and Bunting²⁰ on the viability of flower seeds.

In addition to the Monthly Bulletin, the Department issues a numbered series of special publications. Subjects of temporary or limited interest are handled in this series, of which the latest (as of November, 1934; No. 129) is a directory of nurserymen and florists in California. Formerly, when the Board of Agriculture had administrative responsibilities, it issued an annual statistical report on the agriculture of the State. The last of this series, a volume of more than five hundred pages of text, appeared in 1921. It was a most useful work of reference, including material for which one must now search in many places; but preparation was expensive and perhaps not justified by the demand.

In the preparation of this account, I have had the assistance of members of the Department, and especially of Mr. W. C. Jacobsen, Administrative Assistant and Supervisor of Rodent and Weed Control. It is a pleasure to express cordial appreciation of this assistance. The facts stated, however, are based on my own reading, and the opinions are my own: the responsibility is entirely mine.

Sacramento Junior College,
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A FOSSIL HAZELNUT

HERBERT L. MASON

The genus *Corylus* is not known to occur south of the Santa Cruz Mountains in California. This distribution appears somewhat anomalous since most of its associates occur in the Santa

¹⁹ Smiley, F. J. Weeds of California and methods of control. Op. cit. 11: i-xxii, 73-360, figs. 15-138. 1922.

²⁰ Goss, W. L., and Leatha Bunting. Progress report on length of time flower seeds retain their viability under favorable storage conditions. Op. cit. 22: 413-415. 1932.

Lucia Mountains an additional one hundred miles southward. Yet *Corylus* has not been reported from these mountains. In the Pleistocene floras¹ of Southern California on Santa Cruz Island and at Carpinteria, Chaney and Mason did not report it. In the Tomales flora of Central California it was very abundant. It is of interest to place on record the finding of a fossil nut of *Corylus* by J. F. Katenkamp in a gravel pit in the hills overlooking Montecito in Santa Barbara County. The position of the nut in these gravels as well as the position of the gravels in the geological sequence is in some doubt. An excerpt from a letter by Mr. David B. Rogers of the Santa Barbara Museum of Natural History indicates the status of our information as to the origin of the specimen. "The pit from which it came is at least one thousand feet above sea level, standing at least 70 degrees to the horizontal. It is a reformed deposit of older material quite compact, and giving the appearance of considerable age. However, it *may* be no earlier than early Pleistocene. It is fairly uniform in texture throughout a considerable depth, only the upper few feet differing, this stratum being considerably less in density, and is unconformable with the more compact strata beneath. The fruit might easily have originated in this upper, more recent formation, and have trickled down into the older material in the course of quarry operations."

The nut is flattened on four faces due to pressure and its tissues are carbonized. Due to the absence of any other parts of the plant and to the uncertainties of its age no specific name is assigned to it. The material is deposited in the Santa Barbara Museum of Natural History as "*Pal. Bot. 1 '33.*"

University of California

STUDIES IN WESTERN VIOLETS—I

MIL0 S. BAKER

Sections *Chamaemelianum* and *Nomimium*

All of the western forms of *Viola*, except two, fall without dispute, into two groups known as sections *Chamaemelianum* and *Nomimium*. Although this paper deals only with section *Chamaemelianum*, it is impossible to use the key effectively until one can distinguish the two sections one from the other. In the first place each of our western violets can be assigned easily to its proper section by knowing either the coloring of the corolla or the nature of its habitat. For example, all of the yellow flowered species belong to section *Chamaemelianum*. This section also includes all forms with any yellow color whatever in the corolla. For instance, *Viola Beckwithii* T. & G., *V. trinervata* Howell, *V. Flettii* Piper do not appear to be yellow at all, but a close inspection will disclose that the bases of the petals as well as the spur are yellow or yellowish. Then we have three *Cha-*

¹ Chaney, Mason, Potbury. Carnegie Inst. of Wash. Pub. No. 415. 1934.